DOCUMENT RESUME

ED 365 541 SE 053 989

AUTHOR	Buckbee, Susan J.; And Others
TITLE	Incredible Edibles: Science You Can Eat!
INSTITUTION	National Invention Center, Akron, OH.
PUB DATE	91
NOTE	62p.; A children's program developed for the National Inventors Hall of Fame Induction Weekend, May 18, 1991, for 200 children, grades 1 through 6.
AVAILABLE FROM	National Invention Center, 80 W. Bowery Street, Suite 201, Akron, OH 44308 ($12).
PUB TYPE	Guides - Classroom Use - Teaching Guides (For Teacher) (052)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Elementary Education; Elementary School Science; Elementary School Students; Experiential Learning; Food; *Foods Instruction; Learning Activities; Science Activities; Science Curriculum; *Science Education; Science Experiments; Sensory Experience
IDENTIFIERS	*Hands on Science

ABSTRACT

This book is designed to be a guide for a hands-on science experience for students in grades 3 through 6. Over 200 students can participate at the same time, moving from one station to another. The activities have been selected to encourage experimentation, creativity, higher-order thinking and fun with science. All activities use multi-modality and multi-sensory approaches. Although the program occurs within a 3-hour time frame, the activities could be used individually and/or expanded or adapted for other educational purposes. The program has been developed to be both teacher-friendly and student-friendly. Section I, Nuts & Bolts, provides advice and steps for running the program. Section II, Sections and Stations, presents information on the following sections and the stations they are composed of: (1) Oobleck, (2) Walk On Eggs, (3) Transportation & Food, (4) Preposterous Properties, (5) Food & the Senses, and (6) Fabulous Fast Food. (PR)

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ED 365 541

Incredible Edibles:

Science You Can Eat!

National Invention Center

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INCREDIBLE EDIBLES: SCIENCE YOU CAN EAT!

A children's program developed for the National Inventors Hall of Fame Induction Weekend, May 18, 1991, for 200 children, grades 1 through 6.

Written by

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INTRODUCTION

"Incredible Edibles: Science You Can Eat!" is designed to be an incredible, hands-on science experience. Over 200 students can participate at the same time, moving from one station to another. The activities have been selected to encourage experimentation, creativity, higher-order thinking, and FUN with science. All activities use multi-modality and multi-sensory approaches.

Although the Incredible Edibles Program occurs within a three-hour time frame, the activities could be used individually and/or expanded or adapted for other educational purposes. This program has been developed to be both "teacher-friendly" and "student-friendly". We hope you have as much enjoyment as the original staff and students!

Letterhead

March 8, 1991

Dear Principal:

We hope that some of the highly able and creative children from your school will help us celebrate Induction Weekend for the National Inventors Hall of Fame! "Incredible Edibles: Science You Can Eat" is a special event planned for students in grades 1 through 6 on Saturday morning, May 18, 1991. Details are available on the accompanying registration forms.

Would you help us get the word to your interested students? We have enclosed a few forms, but you may copy more as needed. We can only accommodate 200 students total on a first come, first serve basis, so we ask that you would distribute this information as soon as possible.

Thank you for your help. May you have a creative day!

Sincerely,

Edwin J.C. Sobey, Ph.D.
Executive Director

Enclosures

Sponsored by Summit County Schools, Akron Public Schools, Sylvan Learning Centers, GenCorp, and the National Invention Center

National Invention Center

Children's Program -- Induction Weekend

"Incredible Edibles: Science You Can Eat"

WHAT:	*An incredible, hands-on science experience. Students will spend a lively morning building, exploring, and creating. It's science done with a difference. Join us to explore crazy and creative projects with food!*
WHO:	*The first 200 registrants -- Grades 1 through 6.*
WHEN:	*Saturday, May 18, 1991, 9 a.m. - 11:45 a.m., during Induction Weekend for the National Inventors Hall of Fame.*
WHERE:	*Central-Hower High School, 123 S. Forge St. Free parking. Near Quaker Square and The University of Akron.*
HOW:	*Complete the attached registration form. Return it to the NATIONAL INVENTION CENTER, 80 West Bowery, Suite 201, Akron, Ohio 44308. The $5.00 registration fee should be included as a check made payable to the NATIONAL INVENTION CENTER. Applications must be received by April 19, 1991, but remember -- we can only serve 200 kids -- SO HURRY!!*
COST:	*$5.00 per child.*

tear here

REGISTRATION FORM: INCREDIBLE EDIBLES

NAME OF STUDENT: _____ PHONE: _____

PARENT(S) NAME(S): _____

ADDRESS _____

_____ ZIP: _____

SCHOOL: _____ GRADE: _____

FOOD ALLERGIES: _____

HEALTH PROBLEMS/MEDICATIONS: _____

_____

PARENTAL CONSENT:

I give permission for my child, _____, to participate in the children's program. I understand the arrangements and believe that necessary care and provisions for the supervision of the children will be taken. Beyond this, I will not hold the sponsors responsible. Pictures may be taken of my child to be used in promotional materials.

Signed _____

PLEASE COMPLETE THE EMERGENCY MEDICAL FORM ON THE REVERSE SIDE.

Sponsored by National Invention Center, Summit County Schools, Akron Public Schools, Sylvan Learning Centers, GenCorp

Send form with check for $5.00 per child. Make check payable to the NATIONAL INVENTION CENTER, 80 West Bowery, Suite 201, Akron, Ohio 44308.

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MORNING SCHEDULE

MAY 18, 1991

9:00 AM Students arrive and pick up registration packets.
Parent is given "Kid-Check" for pickup. Student assembles with his/her assigned group in assembly area to watch food-related entertainment until Session I.

9:20 AM SESSION I (All grades.)
Students are accompanied by Food Group Leaders to each section and stay with their groups throughout the day. Grades 1-2 dismiss at 10:30 AM. Grades 3-6 dismiss at 9:55 AM.

9:55 AM SESSION II (Grades 3-6). Dismiss at 10:30 AM.

10:30 AM SESSION II (Grades 1-2). Dismiss at 11:35 AM.
SESSION III (Grades 3-6). Dismiss at 11:05 AM.

11:05 AM SESSION IV (Grades 3-6).

11:35 AM All groups return to assembly area (accompanied by Food Group Leaders.)

11:40 AM Final Spud Box Derby Run-Off. Jugglers.

11:45 AM Student Pick-up.

All food groups are assigned a letter A through J. Each group begins in their same lettered room. The rotation proceeds to the following rooms at the appropriate times:

A to B. B to A. Rotation complete.

C to E to G to I to C, etc., until the rotation is complete.

D to F to H to J to D, etc., until the rotation is complete.

FOOD GROUPS/GRADES

NAME	GRADE (Approx.)	NO. OF STUDENTS
SWEET POTATOES	1	20
FRIENDLY FRUITS	2	20
MIGHTY MEATBALLS	3	20
CAPRICIOUS CARROTS	3	20
SCRUMPTIOUS SWEETIES	4	20
APPLE PIE	4	20
PORK CHOPS	5	20
CHICKEN LITTLES	5	20
ICE CREAM KIDS	6	20
VIVACIOUS VEGIES	6	20

TOTAL: TEN GROUPS OF 20 STUDENTS EACH = 200

DIRECTIONS FOR FOOD GROUP LEADERS

1. Lead your kids to a FUN, FUN morning. You may sing as a group or skip, etc. Smile! Have a good time!

2. Make SURE you know where your kids are at all times. You will be leading your students to several locations.

3. Your group will be scheduled for a restroom break sometime during the morning. If students need to use the restroom at a different time, please go with them.

4. When you enter a room (section), there will be several stations set up. Each child will have an opportunity to be at each station. Help the "section expert" to divide your group so each station has a nearly equal number of kids. The kids should stay at a particular station until invited to move to the next one.

5. Please help to clean up any mess.

6. Thank you for caring about these young people and for sharing your time on a Saturday morning! You are greatly appreciated!!

THANK YOU! THANK YOU!

ROOMS

ROOM #	GRADE	SECTION/STATIONS
A	1-2	**OOBLECK!** -Group: Read Oobleck -Oobleck -Spud Box Derby -Spud Box Derby -The Nose Knows/ Invisible Ink -Restroom Break
B	1-2	**WALK ON EGGS!** -Group: Walk on Eggs Demo -Microscope Station -Ice Cream Roll -Egg Activities -Toothpick Structures
C	3-4	**TRANSPORTATION & FOOD** -Transworld Carrot -Spud Box Derby -Greenhouse to Go
D	5-6	**TRANSPORTATION & FOOD** -Transworld Carrot -Spud Box Derby -Greenhouse to Go
E	3-4	**PREPOSTEROUS PROPERTIES** -Group: Ice Cream in Cups -Demos: -Peanut Power -Perfect Peanut Parfait -Evaporating Peanuts
F	5-6	**PREPOSTEROUS PROPERTIES** -Group: Ice Cream in Cups -Demos: -Peanut Power -Perfect Peanut Parfait -Evaporating Peanuts

ROOMS - cont.

ROOM #	GRADE	SECTION/STATIONS
G	3-4	**FOOD & THE SENSES**
		-Oobleck
		-The Nose Knows
		-Touch Me, I'm Yours
		-Restroom Break
H	5-6	**FOOD & THE SENSES**
		-Oobleck
		-The Nose Knows
		-Touch Me, I'm Yours
		-Restroom Break
I	3-4	**FABULOUS FAST FOOD**
		-Pizza Throw
		-Egg Drop
		-Microscope Table
		-Look Fast!
J	5-6	**FABULOUS FAST FOOD**
		-Pizza Throw
		-Egg Drop
		-Microscope Table
		-Look Fast!

MATERIALS LIST

ROOM A

(Source)	1 Box Cornstarch
	Oobleck Book
	20 Potatoes-Cut in half
	Toothpicks
	Clear tape
	Paper for flags
	Stars
Pat	160+ Macaroni Wheels
	2 Boxes Magic Markers
Susan	1/2 of a Refrigerator Box (Cut lengthwise)
	Mixing bowl (or can)
	Gallon of water
Pat	Various extracts, containers, cotton balls
Pat	Small Worksheets
Pat	6 pencils
	1 bottle of lemon juice
Pat	50 sheets of white paper
Susan	matches & votive candle
	160+ nails
Pat	Q-tips

ROOM B

	2 tall clear containers (2 liter pop bottles: cut off top)
	1 small roll of duct tape
	2 dozen eggs for egg walk
	1 dozen eggs for experiments
	microscopes
Susan	40 papers with circle for drawing
	sprouts
	leaves
	mold
	moss
	blossoms
	dirty water drop
	celery in food color water
	10 bags marshmallows
	5 boxes colored toothpicks
	9 c. cream
	3 c. sugar
	imitation vanilla extract
	1 bag crushed ice
	1 box salt (for ice & for egg activities)
	45 3 oz. cups for serving ice cream
	45 spoons
	kitty litter box
	clipboard to put on eggs
	water

ROOMS C & D (EACH ROOM) NEEDS:

	40 potatoes (minimum) cut in half
Pat	320 macaroni wheels (minimum)
Pat	3200+ nails
	3 boxes of magic markers (at spud box table)
	3 boxes of magic markers (at carrot table)
	6 pencils at carrot table
	1/2 refrigerator box cut lengthwise
	80 carrots (minimum) with slits pre-cut
Pat	box of straws
	16 packs of radish seeds
	1 roll of paper towels
	10 pieces of poster board
	hula hoop or box or some other target
	bucket of water
	scissors

ROOMS E & F (EACH ROOM) NEEDS:

	1 empty bucket
	25 c. cream
	5 c. sugar
	1 bottle imitation vanilla extract
	4 bags of crushed ice
	2 boxes of salt (for ice cream & egg activities)
Susan/ Pat/Cheryl	large cooler
	25 styrofoam 5 oz. cups (re-use these)
	165 paper 3 oz. cups
	90 spoons
	clean empty milk jugs for ice cream mix
	1 can fancy mixed nuts
	2 bags unsalted peanuts in the shell
	3 large corks with needles inserted
	6 flakes of cereal
	acetone nail polish remover
	baby food jar
	300 styrofoam packing "peanuts"
	polymer kit
	sundae glass

ROOMS G & H (EACH ROOM) NEEDS:

2 boxes of cornstarch
gallon of water
mixing bowls or cans
ten items for smell
touch me items (to be provided by the teacher)
cottonballs and film canisters
6 pencils at each of 2 stations
paper towels
dishpan with soapy water (coffee can)

ROOMS I & J (EACH ROOM) NEEDS:

Susan	Shredded Paper
" "	envelopes
" "	paperclips
" "	rubber bands
	2 dozen hardboiled eggs
	Microscopes
	One stalk celery in colored water
	sprouts
	moss
	mold
	blossoms
	grass
	materials
	Star fruit
	kiwi
	mango
	ginger root
	snow peas (2 or 3)
	a little tofu
	leek
	eggplant
Pizzaman	pizza dough
	newspaper or cloth
	pencils
	wastebasket
	roll of masking tape
	worksheet

GROCERY LIST

This list is the actual list we used. This is not the complete food list as we had many other donations.

14 boxes of magic markers
7 dozen eggs
5 boxes cornstarch
10 boxes of colored toothpicks
110 potatoes
5 bags miniature colored marshmallows
5 bags large marshmallows
165 carrots (approx. 16 bags?)
250 ziploc bags
200 styrofoam cups (8 oz. size)
375 paper cups (3 oz. size)
225 plastic spoons
1 box sprouts
celery bunch
32 packs of radish seeds
8 rolls of paper towels
60 cups of whipping cream
20 cups of sugar (Two 5-pound bags)
3 bottles artificial vanilla extract
12 bags of crushed ice
6 boxes of salt
2 boxes of large trash bags
1 small bottle of lemon juice
2 small (sample size) bottles of dishsoap
1 small roll of duct tape
4 rolls of scotch tape
2 large rolls masking tape
2 bags of kitty litter
12 dozen donuts
1 large pack of napkins
3 gallons of orange juice

The following are for the unusual food tables. Feel free to substitute as needed, but remember we need 2 of everything:

2 star fruit
2 kiwi
2 mango
2 ginger root
2 snow peas
1 pkg. tofu
2 leeks
2 eggplants
2 okra

SECTION PLAN OVERVIEW

ROOM A OOBLECK

1. Opening activity: Read part of the Oobleck book to the entire group. (5 or 10 min.)

2. Form four groups of kids.

3. Direct the groups to go to four stations:
   A. Oobleck (10 minutes)
   B. The Nose Knows OR Invisible Ink (10 minutes)
   C. Spud Box Derby (20 minutes)
   D. Spud Box Derby

4. Rotate the kids to the next station
   until all kids have been to each station.

EX.		Time Segment			
		10 min.	10 min.	10 min.	10 min.
	1	A	B	C	C
Group	2	B	A	D	D
	3	D	D	A	B
	4	C	C	B	A

5. Take a restroom, clean/up break (approx. 5 to 10 min.).

ROOM B WALK ON EGGS

1. Opening demonstration for all kids: Walk on eggs (5-10 min.)

2. Form 4 groups of kids.

3. Begin rotation to each station (approx. 10 min. each):
   Microscope station
   Ice Cream Rolling
   Egg Activities
   Structure Station

4. Return to large group to each ice cream (5-10 minutes).

5. Restroom/Clean-up Break (approx. 5-10 min.)

SECTION PLAN OVERVIEW - cont.

ROOMS C & D TRANSPORTATION & FOOD

1. Form three groups and begin rotation to each station (approx. 10 min. each) :
   Trans-world carrot
   Spud Box Derby
   Green House to Go (Students may finish quickly and then observe the Spud Box Derby)

ROOMS E & F PREPOSTEROUS PROPERTIES

1. Mix ice cream mixture in a gallon milk jug when the group arrives. Have each student make ice cream using the cup method. While they are each stirring, they watch the demonstrations. Students will take turns participating in the demos.

   Peanut Power
   Perfect Peanut Parfait
   Evaporating Peanuts

ROOMS G & H FOOD & THE SENSES

1. Form three groups. Rotate through stations (approx. 10 minutes each):
   Oobleck
   The Nose Knows
   Touch me, I'm Yours

2. Take a restroom/clean-up break (5 min.)

ROOMS I & J FABULOUS FAST FOOD

1. Form three groups. Rotate through stations (approximately 10 min. each):
   Look fast!/Microscope
   Pizza Dough Throw
   Egg Drop

REGISTRATION BAG

Plastic Grocery Bag
Instructions for Sidewalk Chalk
Instructions for Apple Face
Microscope

Name tags with the attached kid check will be available at the registration table.

Students will add items to their bags as they move from station to station.

VOLUNTEERS NEEDED

1 Adult for each station
One of these people would be the "section expert" for two rooms;
i.e, A/B, C/D, E/F, G/H

2 Teenagers with each group of kids

4 Adults for check-in

2 Designated Adults for emergencies to be in one place
for the full time

2 Parking lot direction givers

GENERAL VOLUNTEERS

_____Director (And Emergency Personnel)
-Responsible for opening and closing program
-Remains in central location for possible emergency
-Available 8 am-noon
-helps to move supplies to rooms at 8 am
-organizes Food Group Leaders

_____Pizza man
-brings pizza dough
-Available 9 am-noon

_____Entertainer (Juggler)

_____Entertainer (Japanese Cook)

_____Emergency Personnel (Adult)
-Assists with check-in
-Remains in central location for possible emergency
-helps to move supplies to rooms at 8 am
-Available 8 am-noon

_____Check-In Person (Adult or Student)
-Available 8 am-9:30 am
-helps to move supplies to rooms

_____Check-In Person (Adult or Student)
-Available 8 am-9:30 am
-Puts up signs in various rooms and moves furniture as needed

_____Check-In Person (Adult or Student)
-Available 8 am-9:30 am
-Puts up signs in various rooms and moves furniture as needed

_____Parking Lot Attendant
-directs people to door
-Available 8:30 am-9:15 am

_____Supply Director
-Available 8 am-9:30 am
-purchase of all supplies
-organizes the supplies by room ahead of time so that distribution is easy
-recruits additional help as needed (Supply Assistants)

_____Supply Assistant

_____Supply Assistant

_____Food Group Leader (1)
-Available 8:30 am-noon

_____Food Group Leader (1)

_____Food Group Leader (2)

_____Food Group Leader (2)

_____Food Group Leader (3)

_____Food Group Leader (3)

_____Food Group Leader (4)

_____Food Group Leader (4)

_____Food Group Leader (5)

_____Food Group Leader (5)

_____Food Group Leader (6)

_____Food Group Leader (6)

_____Food Group Leader (7)

_____Food Group Leader (7)

_____Food Group Leader (8)

_____Food Group Leader (8)

_____Food Group Leader (9)

_____Food Group Leader (9)

_____Food Group Leader (10)

_____Food Group Leader (10)

STATION VOLUNTEERS

**Designate the section expert

Room A

_____Ooblech!

_____Spud Box Derby

_____Spud Box Derby

_____The Nose Knows

Room B

_____Microscope Station

_____Ice Cream Roll

_____Egg Activities

_____Toothpick Structures

Room C

_____Transworld Carrot

_____Spud Box Derby

_____Greenhouse to Go

Room D

_____Transworld Carrot

_____Spud Box Derby

_____Greenhouse to Go

Room E

_____Ice Cream in Cups

_____Demos

_____Ice Cream Helpers
(possibly 3 or 4)

_____

_____

Room F

_____Ice Cream in Cups

_____Demos

_____Ice Cream Helpers
(possibly 3 or 4)

_____

_____

Room G

_____Oobleck

_____The Nose Knows

_____Touch Me, I'm Yours

Room H

_____Oobleck

_____The Nose Knows

_____Touch Me, I'm Yours

Room I

_____Pizza Throw

_____Egg Drop

_____Microscope Table

_____Look fast!

Room J

_____Pizza Throw

_____Egg Drop

_____Microscope Table

_____Look fast!

SECTION: OOBLECK
STATION: OOBLECK

FACILITY:

Large table. Floor that can get messy, if oobleck is dropped. Oobleck can be vacumed if it dries; it does not stain.

MATERIALS:

Dr. Seuss' Oobleck Book for young students
Title: Bartholomew & the Oobleck
Container of water
Box of cornstarch
Spoon

DIRECTIONS: Oobleck Recipe:

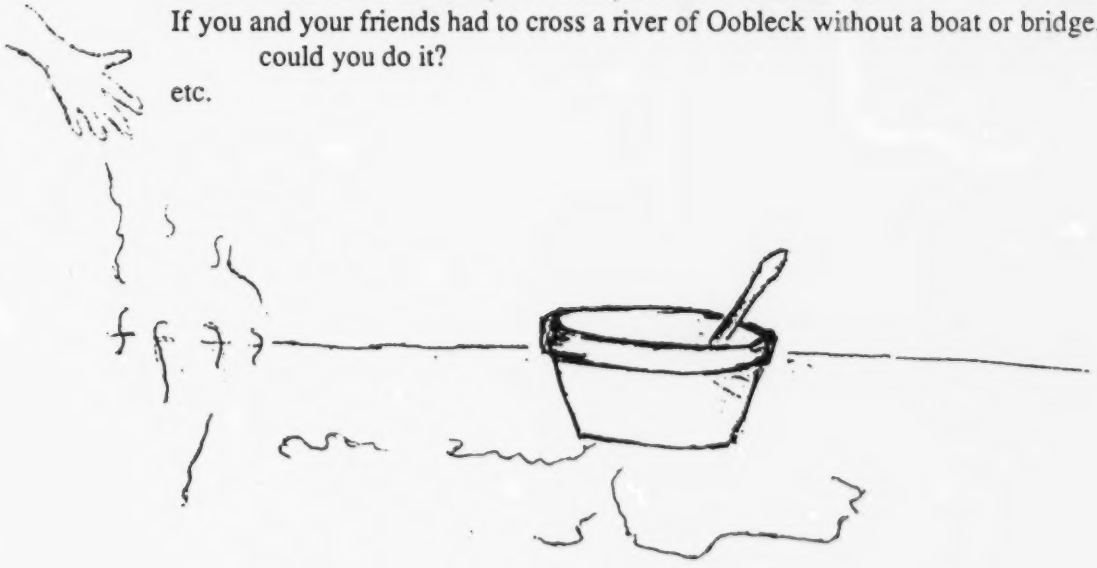
Mix together 1/3 c. water and 1/2 c. cornstarch in a mixing bowl or coffee can.

Have each child:

feel the mixture
stir it
gently punch it with a fist
push a finger into it
hold it in their hands
etc.

Choose questions appropiate for your students:

Describe Oobleck.
What does it remind you of?
How is this substance like (and unlike) Dr. Seuss's Oobleck?
If you and your friends had to cross a river of Oobleck without a boat or bridge, how could you do it?
etc.



SECTION: OOBLECK
STATION: SPUD BOX DERBY

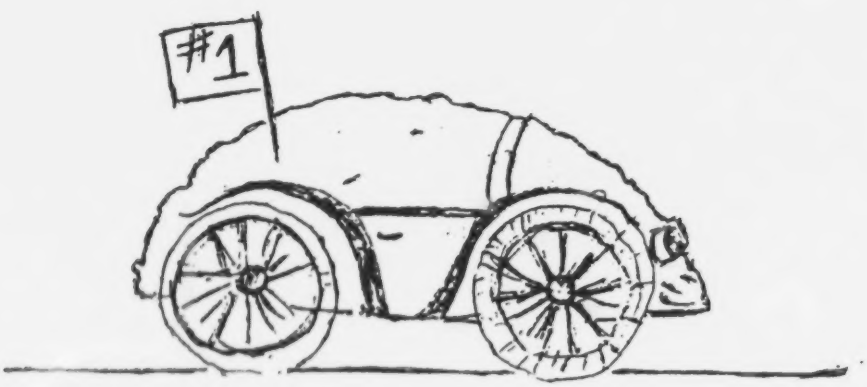
FACILITY: Classroom Table or Desks

MATERIALS:

Potato (sliced in half lengthwise; 1/2 for each car)
Macaroni Choo Choos (For wheels; 4 for each car)
1" nails with fairly large heads (4 for each car)
Magic Markers
Plastic
Toothpicks, flags, paper, etc. for decorations
Refrigerator Box (cut in half lengthwise)

DIRECTIONS:

Encourage the children to be as creative as possible as they design and make their very own spud box derby! Attach the wheels by inserting the nail through the center hole of the macaroni and pushing the nail into the potato. (Potatoes may be marked for wheel placement for younger children.) Race the spud box derbies down the inside of the refrigerator box. Have fun! Determine the car from each group of twenty kids which goes the farthest on the floor. The winner from each group will race at the culminating event.



SECTION: OOBLECK
STATION: THE NOSE KNOWS

FACILITY: Table or desk

MATERIALS:

Containers for smells (empty film canisters, Legg's eggs, prescription vials, or similar containers). Each vial should be numbered for later identification.

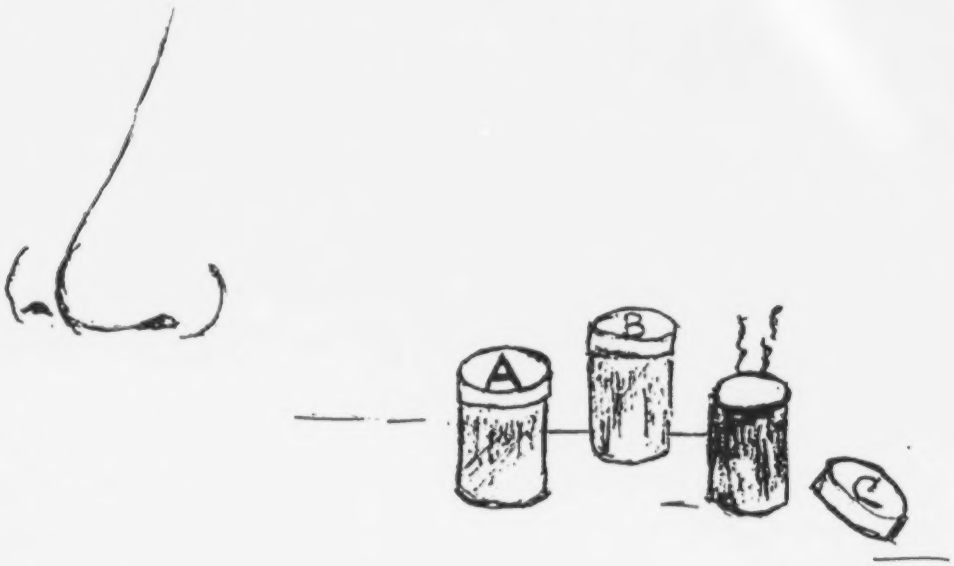
Various extracts or "smelly items" (Suggestions):

vanilla	burnt toast
coffee	garlic
onion	hard-boiled egg
chocolate	spoiled milk
lemon	anise (licorice)
almond	vinegar
banana	etc....

Worksheet with blanks for group to complete.
Pencils
Cottonballs

DIRECTIONS:

Each group is given a worksheet to complete that has a place to list the various smells. The worksheet is attached.



The Nose Knows

Smell Test

Hypothesis	Results
Smells Like. . .	Actually is. . .
A _____	A _____
A1 _____	A1 _____
B _____	B _____
C _____	C _____
G _____	G _____
L _____	L _____
M _____	M _____
S _____	S _____
V _____	V _____
Vi _____	Vi _____

SECTION: OOBLECK
STATION: INVISIBLE INK!

FACILITY: Table

MATERIALS:

White paper
Matches/Candle (preferably votive type)
Paint brushes or cotton swabs
Lemon juice such as real lemon

DIRECTIONS:

Children can "paint" on the white paper or write their names with the lemon juice. After it dries, the writing will become visible if held over the flame of the candle.

SECTION: WALK ON EGGS
STATION: EGG ACTIVITIES

FACILITY: Table and an open floor space

WHOLE GROUP INTRODUCTORY ACTIVITY

MATERIALS:

1) 1 doz. eggs in an egg carton
   Short-sided box with kitty litter or sawdust in it. Board (scrap such as masonite or a clipboard).

DIRECTIONS:

1) Place a board on top of the open box of eggs. Choose eggs that are the same size.
   Place heavy books or a weight on the board.
   The eggs hopefully will not break. Put the eggs on their sides into the box of kitty litter and repeat the same procedure. The eggs break. Why?

SMALL GROUP ACTIVITIES AT DEMONSTRATION TABLE

MATERIALS:

2) 2 raw eggs
   Two tall clear containers: one with water; one with salt water.

DIRECTIONS:

2) Try to float the eggs. Which one floats? Why?

MATERIALS:

3) 1 raw egg; 1 hardboiled egg

DIRECTIONS:

3) Try to spin the eggs. Which one spins? Why?

SECTION: WALK ON EGGS
STATION: MICROSCOPE STATION

FACILITY: Table

MATERIALS:

Hand-held microscope(s) preferably—or regular microscopes. Hand held microscopes are available at Radio Shack (approx. $9)

Foods that would be interesting to look at under the microscope.

EX.:

- onion skin
- mold
- carrot leaves
- food blossoms
- celery in food dye
- ground meat
- dirty water
- sprouts

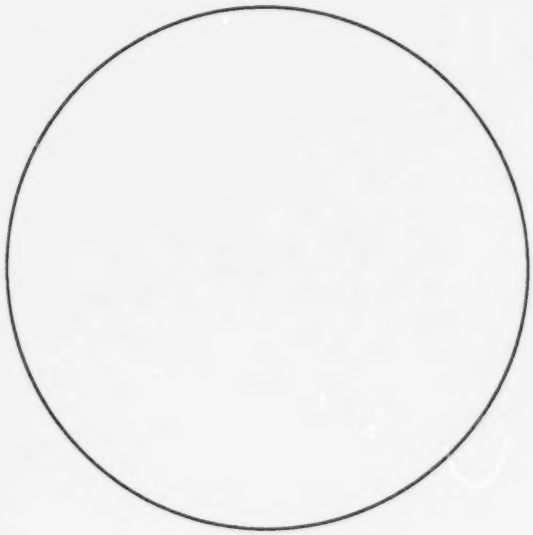
Drawing sheet with three circles on it

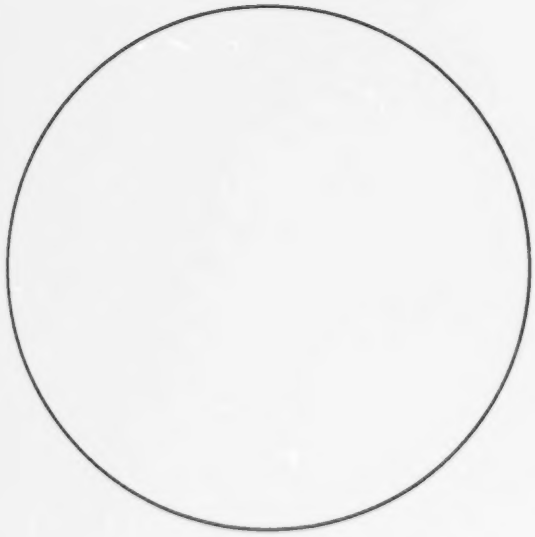
Pencils

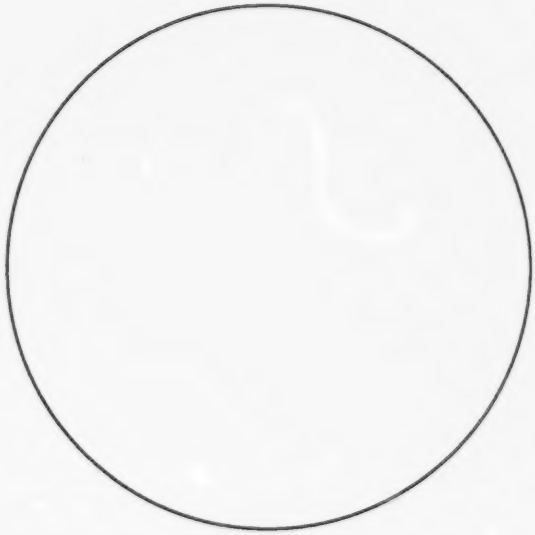
DIRECTIONS:

Students look at various objects under the microscope and draw what they see on the sheet. They can compare sheets with each other and see if they can identify the real object from the drawing.

MICROSCOPE STATION OBSERVATION WORKSHEET







SECTION: WALK ON EGGS
STATION: ICE CREAM ROLL

FACILITY: Open area in a classroom or preferably an outdoor grassy area.

MATERIALS:

Shaved ice sprinkled with salt.
2 Large coffee cans insulated with newspaper
2 Smaller coffee cans
Duct tape (optional) for sealing can lid
Ice cream ingredients:
4 1/2 c. cream
1 1/2 c. sugar
1 T. Vanilla
3 oz. paper cups for serving
spoons
old newspaper or plastic dropcloth for floor

DIRECTIONS:

Split the recipe between the two small coffee cans.

Put the ice cream ingredients in the small coffee can. Tightly close the lid. You may want to duct tape the lid closed! Place the small can inside the large can and pack the ice all around it. Tightly close the second lid. Roll the can between participants. Add more ice and salt when needed.

SECTION: WALK ON EGGS!
STATION: TOOTHPICK STRUCTURES

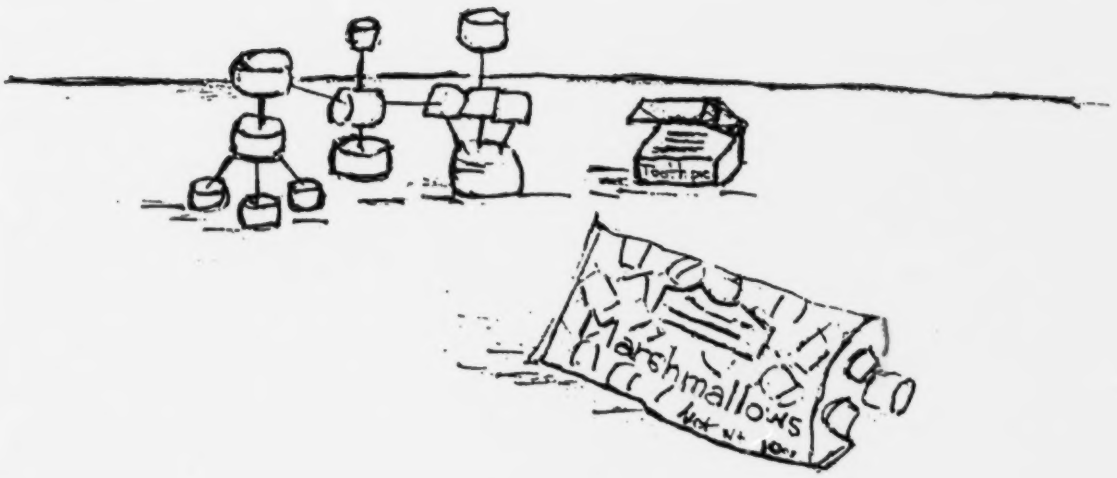
FACILITY: Table

MATERIALS:

Bags of marshmallows (Large & small and in colors)
Toothpicks (colors if available)

DIRECTIONS:

Begin with the first group of children.
Have them build a structure. The next group of children will add onto the structure.
The next group continues...
How big and intricate can it become??!



SECTION: TRANSPORTATION & FOOD
STATION: TRANSWORLD CARROT

FACILITY: Open classroom area

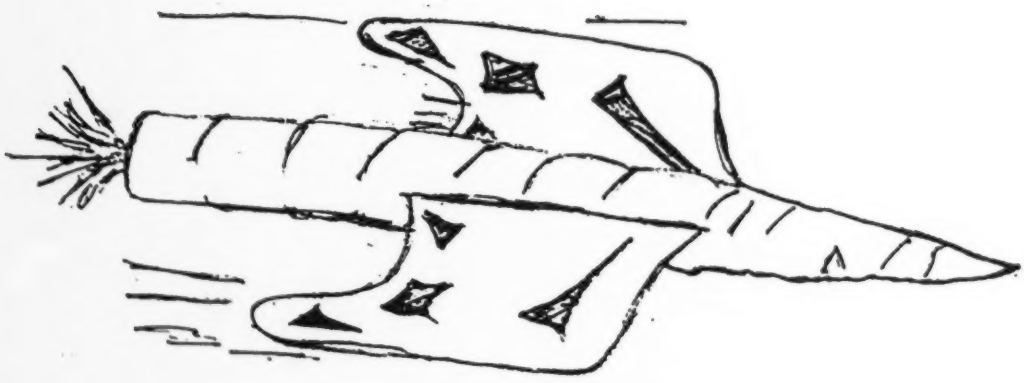
MATERIALS:

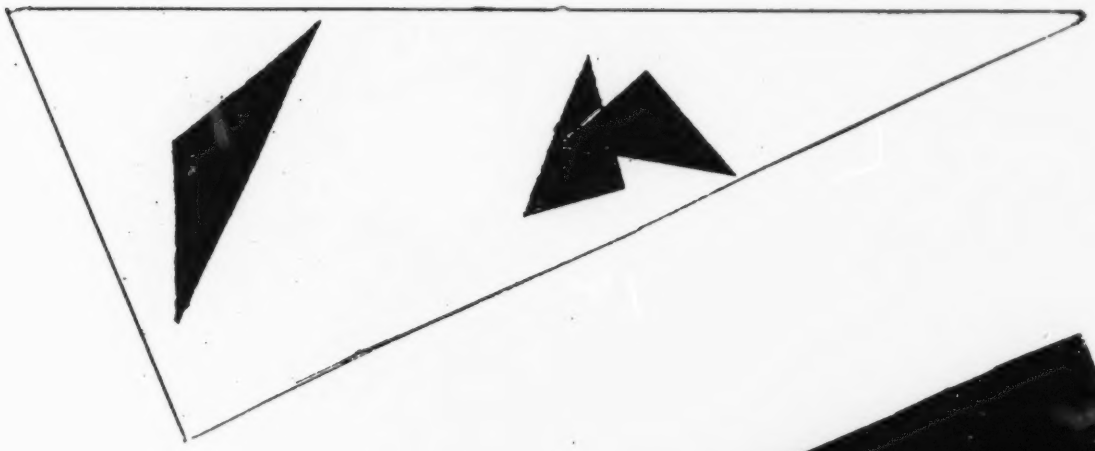
Carrot per child
Poster Board
Scissors
Magic Markers
Knife
Shoe box (decorated?)
Wing patterns
Hula hoop
Pencils (for tracing patterns)

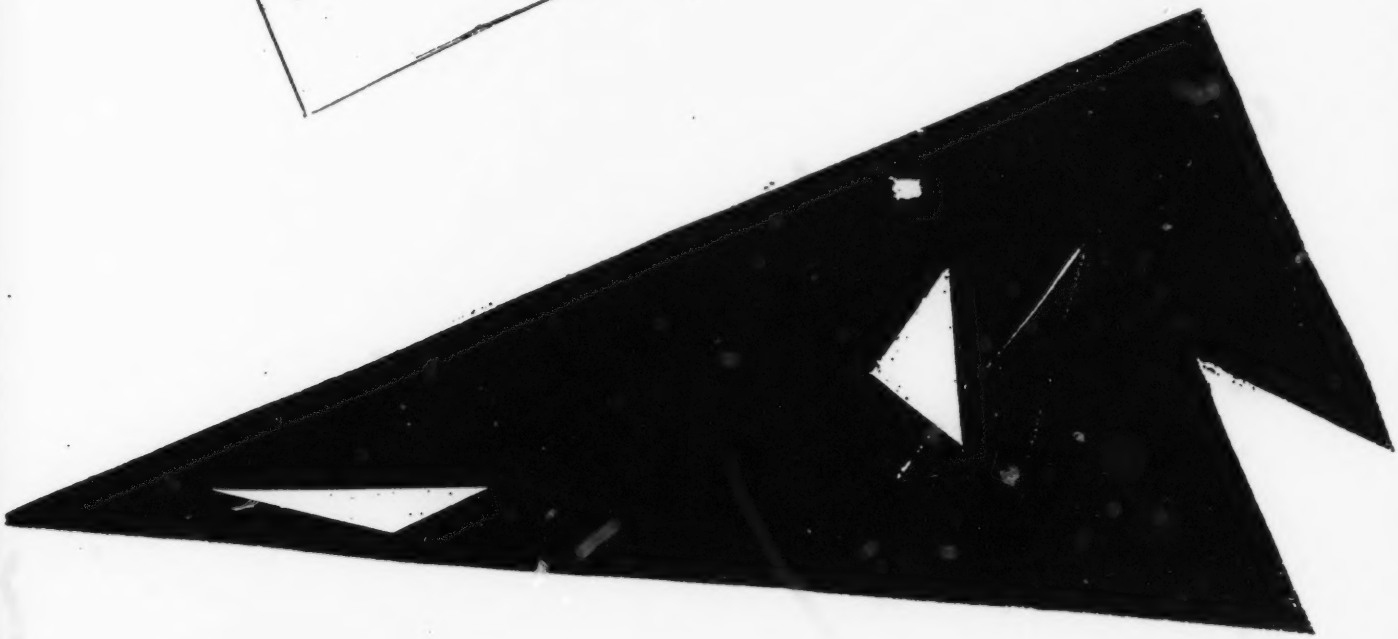
DIRECTIONS:

Adult cuts two slits in the sides of the carrot. Child designs, cuts, and colors the wings which fit into the slits of the carrot. Child may trace pattern if desired.

The carrot can "glide in the air", so to speak, to a target, such as a shoe box.







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SECTION: TRANSPORTATION & FOOD
STATION: SPUD BOX DERBY

FACILITY: Classroom Table or Desks

MATERIALS:

Potato (sliced in half lengthwise; 1/2 for each car)
Macaroni Choo Choos (For wheels; 4 for each car)
1" nails with fairly large heads (4 for each car)
Magic Markers
Toothpicks, flags, paper, etc. for decorations
Refrigerator Box (cut in half lengthwise)

DIRECTIONS:

Encourage the children to be as creative as possible as they design and make their very own spud box derby! Attach the wheels by inserting the nail through the center hole of the macaroni and pushing the nail into the potato. (Potatoes may be marked for wheel placement for younger children.) Race the spud box derbies down the inside of the refrigerator box. Have fun! Determine the car from each group of twenty kids which goes the farthest on the floor. The winner from each group will race at the culminating event.

SECTION: TRANSPORTATION & FOOD
STATION: GREENHOUSE TO GO

FACILITY: Table and floor that can get messy

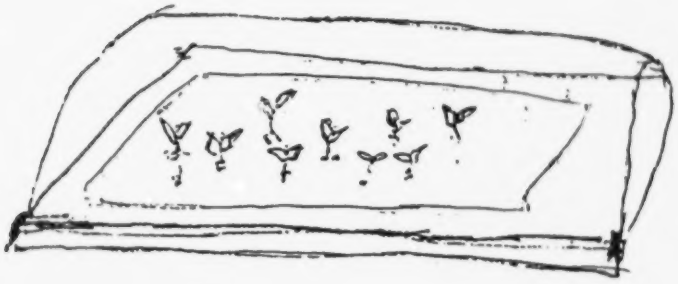
MATERIALS:

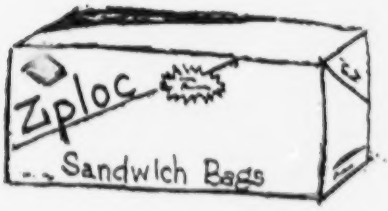
ZipLock baggie per child
Papertowel per child
radish seeds
gallon of water in a bucket
straws

DIRECTIONS:

Have the children fold their paper towel and wet it. Have them place the towel in the baggie and put a few seeds on it. Instruct them to seal the baggie with the straw inserted. They will then blow up the baggie through the straw. Then remove the straw.

Discuss: Why is there moisture on the sides of the baggie? How long will the seeds take to sprout? How long can the seeds live in this greenhouse? What will the students have to do in order for the seeds to continue to live? Etc.





SECTION: PREPOSTEROUS PROPERTIES
STATION: ICE CREAM IN CUPS

FACILITY: Open floor area that can be cleaned up.

MATERIALS:

Ice shaver or sno-cone machine
Ice
Cooler for the ice
For eight kids:
Premix: 2 c. cream
1/2 c. sugar
1/2 tsp. vanilla
2 dixie cups (3 oz. size) per child
1 styrofoam cup per child
salt for the ice
plastic spoon for each child
bucket in which to dump waste salt water

DIRECTIONS:

Mix the ice cream solution in a bowl or plastic jug. Place salted, shaved ice into the styrofoam cup. Place a double dixie cup on top of ice and pour about 2 oz. of the mixture in the dixie cup. Let the students stir their mixture until it becomes ice cream. Be careful that the salt water does not get in the ice cream mixture. More ice and salt will be needed.

SECTION: PREPOSTEROUS PROPERTIES
STATION: PEANUT POWER

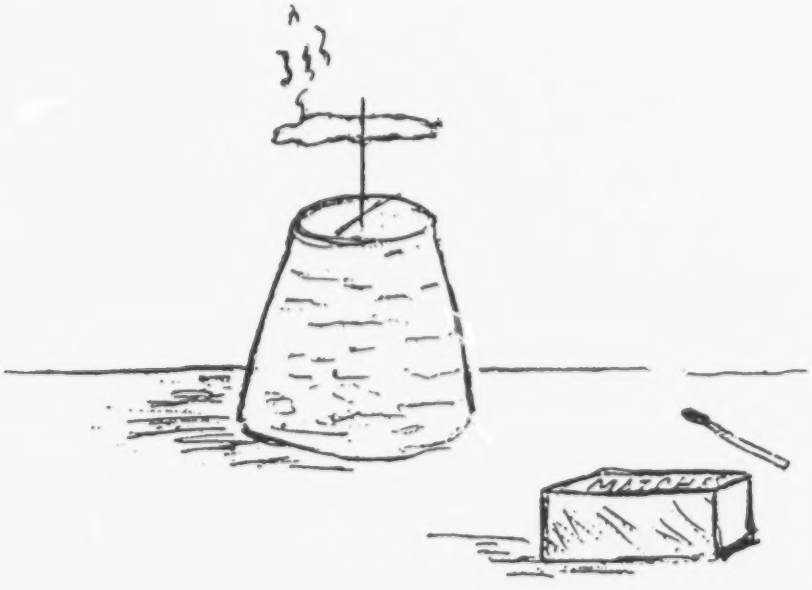
FACILITY: Table

MATERIALS:

Variety of nuts
Breakfast cereal
Wire
Cork
Stick matches

DIRECTIONS:

Intro: Many foods have stored power; energy stored inside (carbohydrates) for use by consumers. Demo: This can be demonstrated by applying a high concentration of heat (open flame) to the food. Start with breakfast cereal placed on the wire and cork platform. Hypothesize about the possible reaction that will take place when a flame is introduced. Burn the cereal and ask for student observations. Note color, speed of decay, and remains. Introduce "carbohydrate" as the main substance that burns and gives off the heat, color, and duration of burn. Introduce variety of nuts and postulate the reaction.



SECTION: PREPOSTEROUS PROPERTIES
STATION: PERFECT PEANUT PARFAIT

FACILITY: Demonstration Table

MATERIALS:

Parfait Glasses
Straws
Food coloring
Peanuts
Polyurethane Foam System
Available through:
Flinn Chemical Catalog
P.O. Box 219
131 Flinn Street
Batavia, IL 60510
Catalog No. C-0335
Can A & B: Price $20.65

DIRECTIONS:

Intro.: "How would you like to learn how to make a perfect peanut parfait that would be an everlasting creation?" Take a parfait glass. Add polymer product A. Add food coloring of choice to the glass. Stir with straw. Add equal amount of polymer product B and stir with the straw until the mixture begins to foam. Hold straw in desired position as foam rises to the top of the glass. When chemical reaction is complete, garnish with a peanut. Let stand for a few minutes to harden. (Chemical reaction gives off an amount of heat.) Give the parfait to one of the students.

SECTION: PREPOSTEROUS PROPERTIES
STATION: EVAPORATING PEANUTS

FACILITIES: Table, newspaper

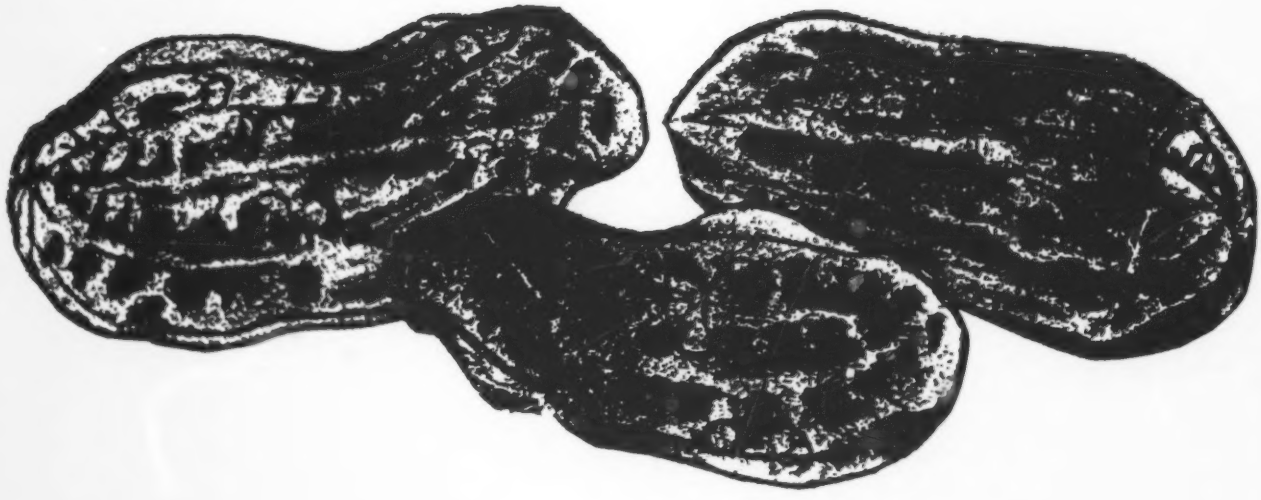
MATERIALS:

Styrofoam packing peanuts
Baby food jar
Acetone

DIRECTIONS:

Intro.: How many peanuts can you get into this jar? Try a few of the students' suggestions. Make note of the number successfully placed in the jar. Postulate: How can the number be increased? Introduce acetone and challenge the student to a "fifty count" drop into the jar. Have students make predictions before beginning. Increase number on second trial.

Final evaluation: Styrofoam is basically air and the mass can be reduced significantly if the air is eliminated.



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SECTION: FOOD & THE SENSES
STATION: OOBLECK

FACILITY: Large table. Floor that can get messy, if oobleck is dropped. Oobleck can be vacuumed if it dries; it does not stain.

MATERIALS:

Dr. Seuss' Oobleck Book for young students
Title: Bartholomew & the Oobleck, 1948
Container of water
Box of cornstarch
Spoon

DIRECTIONS:

Oobleck Recipe:
Mix together 1/3 c. water and 1/2 c. cornstarch in a mixing bowl or coffee can.

Have each child:
feel the mixture
stir it
gently punch it with a fist
push a finger into it
hold it in their hands
etc.

Choose questions appropiate for your students:
Describe Oobleck.
What does it remind you of?
How is this substance like (and unlike)
Dr. Seuss's Oobleck?
If you and your friends had to cross a river of Oobleck without a boat or bridge, how could you do it?
etc.

SECTION: FOOD & THE SENSES
STATION: THE NOSE KNOWS

FACILITY: Table or desk

MATERIALS:

Containers for smells (empty film canisters, Legg's eggs, prescription vials, or similar containers). Each vial should be numbered for later identification.

Various extracts or "smelly items" (Suggestions):

vanilla	burnt toast
coffee	garlic
onion	hard-boiled egg
chocolate	spoiled milk
lemon	anise (licorice)
almond	vinegar
banana	etc.....

Worksheet with blanks for group to complete.
Pencils
Cottonballs

DIRECTIONS:

Each group is given a worksheet to complete that has a place to list the various smells. The worksheet is attached.

The Nose Knows

Smell Test

Hypothesis

Smells Like. . .

A _____

A1 _____

B _____

C _____

G _____

L _____

M _____

S _____

V _____

Vi _____

47

Results

Actually is. . .

A _____

A1 _____

B _____

C _____

G _____

L _____

M _____

S _____

V _____

Vi _____

48

SECTION: FOOD & THE SENSES
STATION: TOUCH ME, I'M YOURS

FACILITY: Display Table

MATERIALS:

Plastic containers for food
Box(es) with flaps that can conceal the bowl.
Various foods:
Cooked oatmeal Cooked corn
Cooked spaghetti Dried peas
Cooked broccoli Skinless chicken
Mashed potatoes Fish
Raw potato Raw carrot
Hardboiled egg

Dish pan with soapy water.
Paper towels.
Paper to list items.

DIRECTIONS:

The group works together to identify the various materials and to list them on the paper.

TOUCH ME, I'M YOURS WORKSHEET

After each person in your group has felt the foods in the mystery box, have your group try to identify the various materials and list them below.

1. _____

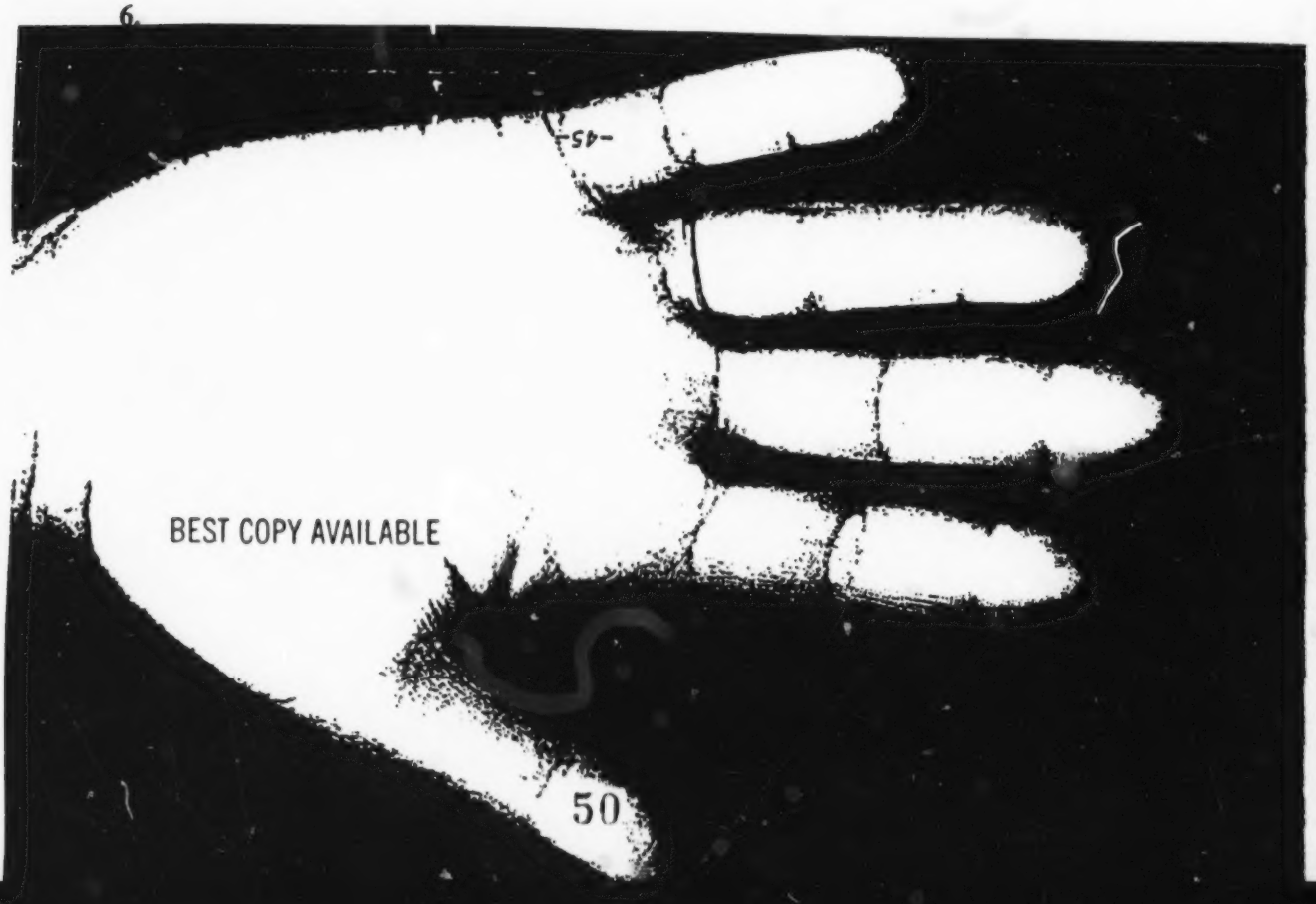
2. _____

3. _____

4. _____

5. _____

6.



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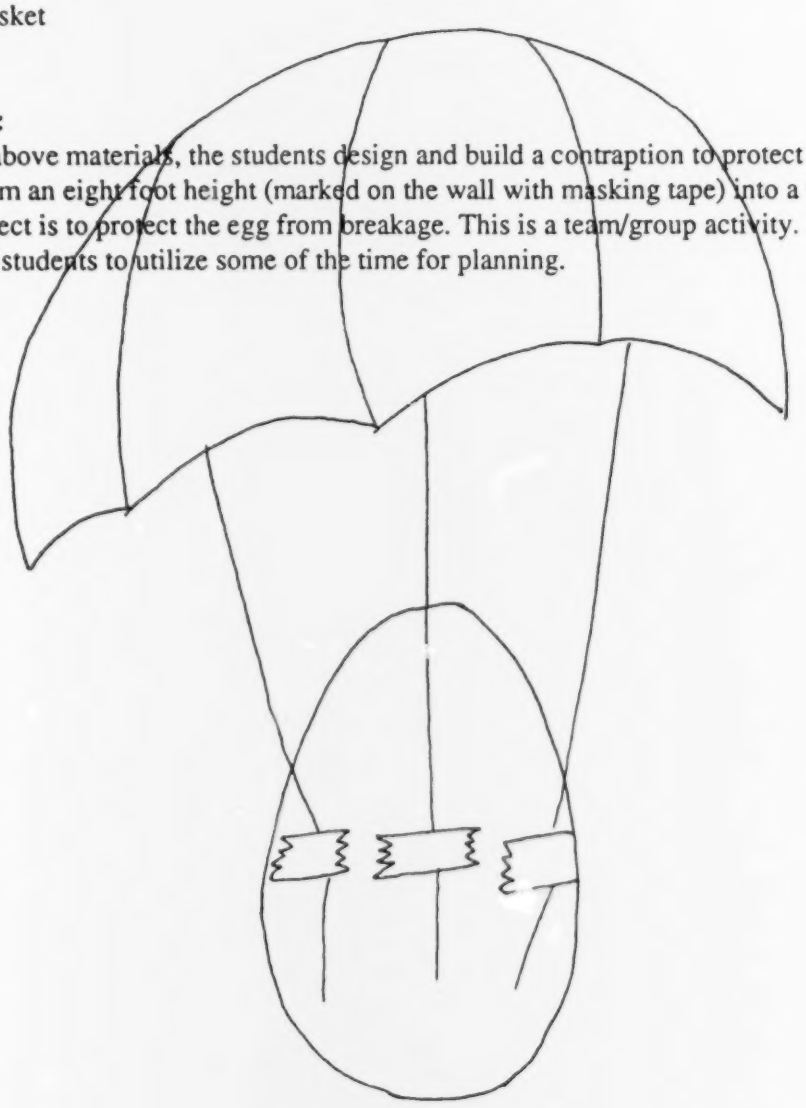
SECTION: FABULOUS FAST FOOD
STATION: EGG DROP

FACILITY: Room

MATERIALS:

Hardboiled egg
Envelope
Shredded paper
Masking tape (1 foot piece)
Rubber band
Paperclip
Wastebasket



DIRECTIONS:

Using the above materials, the students design and build a contraption to protect egg as it is dropped from an eight foot height (marked on the wall with masking tape) into a waste-basket. The object is to protect the egg from breakage. This is a team/group activity.

Encourage students to utilize some of the time for planning.

SECTION: FABULOUS FAST FOOD
STATION: MICROSCOPE STATION

FACILITY: Table

MATERIALS:

Hand-held microscope(s) preferably—or regular microscopes. Hand held microscopes are available at Radio Shack (approx. $9)

Foods that would be interesting to look at under the microscope. EX.:

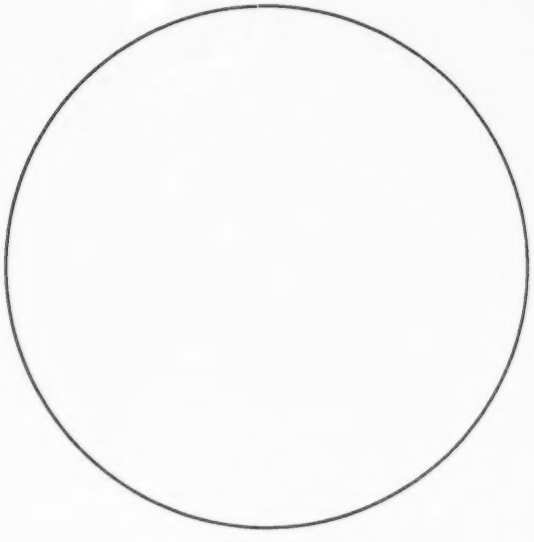
onion skin	celery in food dye
mold	ground meat
carrot leaves	dirty water
food blossoms	sprouts

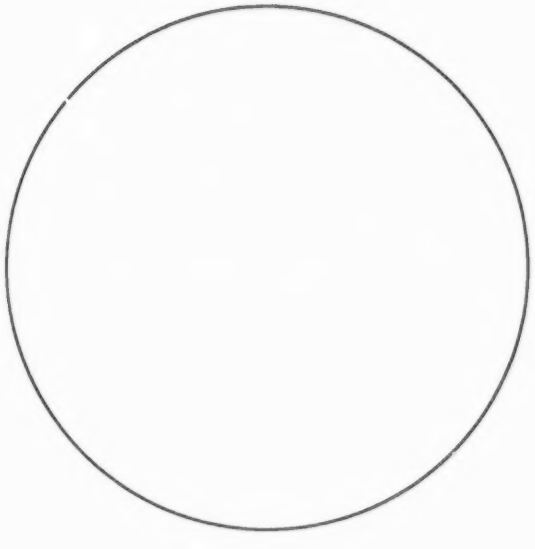
Drawing sheet with three circles on it
Pencils

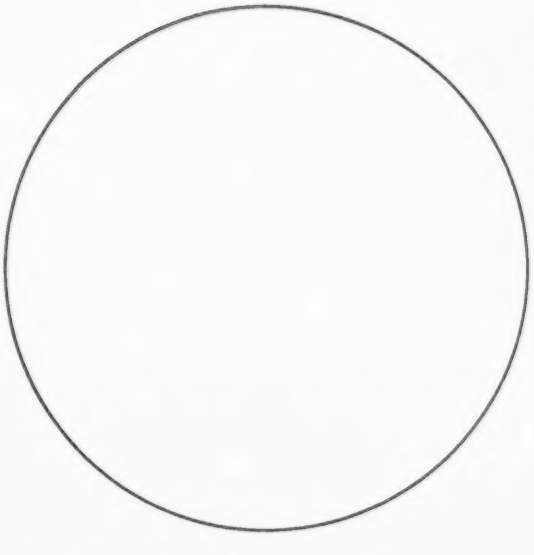
DIRECTIONS:

Students look at various objects under the microscope and draw what they see on the sheet. They can compare sheets with each other and see if they can identify the real object from the drawing.

MICROSCOPE STATION OBSERVATION WORKSHEET







SECTION: FABULOUS FAST FOOD
STATION: LOOK FAST!

FACILITY: Large table

MATERIALS:

Several exotic foods

EX.

star fruit	snow peas
kiwi	tofu
mango	leeks
ginger root	eggplant

Newspaper or cloth

DIRECTIONS:

Display the food on the table.

Cover with newspaper or the cloth.

Uncover and allow the students to look at the food for approximately 30 seconds. Recover. See how many of the items the students can remember and identify. Try again for an additional 30 seconds. Then identify all of the foods. The students can touch the food, of course.

SECTION: FABULOUS FAST FOOD
STATION: PIZZA THROW

FACILITY: Table and open space

MATERIALS:

Professional Pizza Person (Very important!)
Commercial Pizza Dough

DIRECTIONS:

The Pizza Person demonstrates the pizza throw. The students attempt it, too! Discuss the elasticity of the dough.

SECTION: PREPOSTEROUS PROPERTIES
STATION: DANCING RAISINS

FACILITY: Table

MATERIALS:

Handful of raisins (or dry noodles for "worms")
Tall clear container
Clear soda pop (or yellow Mountain Dew)

DIRECTIONS:

Put a few of the raisins into the container of soda pop. Watch the raisins dance. You can say, "Elevator up, elevator down."

SECTION: PREPOSTEROUS PROPERTIES
STATION: EGG ACTIVITIES

FACILITY: Table and an open floor space

MATERIALS:

1) 2 raw eggs

Two tall clear containers: one with water; one with salt water.

DIRECTIONS:

1) Try to float the eggs. Which one floats? Why?

MATERIALS:

2) 1 raw egg; 1 hardboiled egg

DIRECTIONS:

2) Try to spin the eggs. Which one spins? Why?

SECTION: PREPOSTEROUS PROPERTIES
STATION: MILK PAN ART

FACILITY: Table. Working surface may get messy.

MATERIALS:

Shallow baking pan
Milk
Food Color
Liquid soap

DIRECTIONS:

Fill the pan 1/2" deep with milk.
Have kids place a few drops of different food color in each corner. Observe.
Now add a couple drops of dish soap.
Observe again. What makes the difference?
Why?

Answer: Milk fat and water-based food color tend not to mix until you add soap.
The soap breaks the surface tension.
Ask, "What does soap do when you wash your hands?"

SECTION: PREPOSTEROUS PROPERTIES
STATION: IODINE TEST

FACILITY: Demonstration Table

MATERIALS:

- Iodine
- Green banana
- Ripe banana
- Cut potato
- Packet of sugar

DIRECTIONS:

Place a drop of iodine on each of the substances. Observe for color change which indicates a starch or a sugar.

SECTION: PREPOSTEROUS PROPERTIES
STATION: IT'S A GAS

FACILITY: Demonstration Table

MATERIALS:

Quart size plastic milk jug
3 T. baking soda
1 c. vinegar
water

DIRECTIONS:

Place baking soda in the jug
Fill to 2 inches of water.
Shake mixture.
Add vinegar. Quickly, place glove over mouth of jar. The glove should stand up because of escaping gas.

SECTION:
STATION:

FACILITY:

MATERIALS:

DIRECTIONS:

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